

Effectiveness of Giving a Combination of Music Therapy and Warm Compresses to Reduce Menstrual Pain (Dysmenorrhea)

Ayunita Pratiwi

Indonesia Maju University

Email: ayunitapratwi1@gmail.com

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Abstract

Introduction: Dysmenorrhea is a pain in the lower abdomen that occurs during menstruation. Someone experiencing dysmenorrhea will not be life-threatening, but it can be painful for many teenagers who experience it. Therapy that can be used to reduce menstrual pain (dysmenorrhea) is a combination of music therapy and warm compresses.

Objective: To determine the effectiveness of giving a combination of music therapy and warm compresses to reduce menstrual pain (dysmenorrhea) in adolescent girls.

Method: This research used a pre-experimental design with a one-group pre-test and post-test design. The population in this study were all class This research uses NRS (Numeric Rating Scale) and SOP (Standard Operating Procedure) survey observations. Data analysis used the Wilcoxon test.

Results: Wilcoxon test results with a p-value of $0.000 < p\text{-value } 0.05$, which means H_a is accepted.

Conclusion: There is the effectiveness of a combination of music therapy and warm compresses in reducing menstrual pain (dysmenorrhea) in young women at MAN 13 South Jakarta in 2022.

Keywords: menstrual pain, music therapy, teenagers, warm compresses

Introduction

Menstruation is periodic and cyclic bleeding from the uterus, accompanied by shedding of the endometrium. During adolescence, changes occur in three areas, namely psychosocial development, cognitive development and physical development, which are used for the start of menstruation (menarche).¹ The first menstruation usually occurs between the ages of 10-16 years. During menstruation, teenagers will also experience menstrual pain (dysmenorrhea). Dysmenorrhea is a pain in the lower abdomen that occurs during menstruation. Someone experiencing dysmenorrhea will not be life-threatening, but it can be painful for many teenagers who experience it.² The impact of dysmenorrhea, apart from interfering with daily activities, includes reducing performance and causing complaints such as nausea, which is sometimes accompanied by vomiting and diarrhea. Most women consider menstrual pain to be normal, they assume that in 1-2 days the pain will disappear. Severe menstrual pain can be a sign and

symptom of a disease, for example endometriosis, which can make it difficult to have children.³

In general, dysmenorrhea treatment is divided into two categories, namely pharmacological and non-pharmacological approaches.³ The most common pharmacological therapy for cases of menstrual pain is NSAIDs (Nonsteroidal Anti-inflammatory Drugs) which inhibit the production and action of prostaglandins. Low levels of prostaglandin will reduce uterine contractions so that discomfort can be reduced. However, pharmacological therapy often causes side effects on the gastrointestinal tract, for example dyspepsia and other symptoms of irritation of the gastric mucosa. Discomfort effects for women will arise if menstrual pain is not treated, for this reason, a treatment method that is quite practical and does not cause side effects is needed, namely non-pharmacological methods.⁴ WHO (2019) states that 80% of women around the world feel uncomfortable or experience menstrual pain during menstruation.⁵ Meanwhile in Indonesia, the prevalence of dysmenorrhea in Indonesia is 107,673 people (64.25%), consisting of 59,671 people (54.89%) with primary dysmenorrhea, and 9,496 people (9.36%) with secondary dysmenorrhea. The prevalence rate of primary dysmenorrhea in Jakarta reached 87.5%, mild pain 20.48%, moderate pain 64.76%, and severe pain 14.76%.⁶

For primary menstrual pain (dysmenorrhea), treatment is often done with non-pharmacological treatment, but some people use pharmacological treatment. Meanwhile, for secondary menstrual pain (dysmenorrhea), treatment can only be done by providing pharmacological treatment. Treatment is carried out according to the accompanying disease.³ Some of the non-pharmacological therapies include warm compress therapy and music therapy. Warm compress therapy is one of several non-pharmacological (complementary) therapies to reduce pain intensity. Hot temperatures are known to minimize muscle tension. After the muscles relax, the pain will gradually disappear.³ Warm compresses are a simple, warm-conducting therapy that aims to reduce pain, spasms and ischemia. The warm effect produced by a warm compress can relieve ischemia by reducing uterine contractions and opening blood vessels so that it can relieve pain by reducing tension and providing a feeling of comfort.⁷

Apart from warm compress therapy, the distraction method is music therapy. Distraction is a technique of diverting the client's attention to something else thereby reducing awareness of pain and even increasing pain tolerance. Distraction methods can also increase pleasant sensory stimuli which can cause the release of endorphins. Music also produces changes in the status of consciousness through sound, silence, space and time. Music must be listened to for a minimum of 15 minutes to be able to provide a therapeutic effect. This method can cause the release of endorphins, thereby blocking the transmission of pain stimuli.⁸ Listening to music can produce endorphins (a morphine-like substance supplied by the body that can reduce pain) which can inhibit the transmission of pain impulses in the central nervous system so that the sensation of menstrual pain can be reduced. Music also works on the limbic system which will be transmitted to the nervous system. which regulates the contraction of the body's muscles, thereby reducing muscle contractions. Because this music is of extraordinary magnitude in the development of health science, including having soft tones, the tones provide alpha wave stimulation, calm, and make the listener more relaxed.⁹

Dysmenorrhea is pain during menstruation. Pain is felt in the lower abdomen, sometimes the pain extends to the waist and back. Adolescent girls who experience pain (dysmenorrhea) are still quite high and during menstruation or menstruation, some women feel that their activities are disrupted and some women need treatment. Apart from that, the condition of female students is that they lack knowledge about dysmenorrhea which is felt to take quite a long time, around ± 30 minutes, so young women have a little difficulty if they experience menstrual pain (dysmenorrhea), they have to go to the hospital first to get help from

the medical team and also not many young women know about it. regarding non-pharmacological treatments, one of which is warm water compress therapy and classical music therapy. Warm compresses are a simple, warm-conducting therapy that aims to reduce pain. The warm effect produced by a warm compress can relieve ischemia by reducing uterine contractions and smoothing blood vessels so that it can relieve pain by reducing tension and providing a feeling of comfort. Listening to music can also produce endorphins (morphine-like substances supplied by the body that can reduce feelings of aches/pains) which can inhibit the transmission of pain impulses in the central nervous system so that the sensation of menstrual pain can be reduced, music also works on the limbic system which will be delivered to the nervous system which regulates the contraction of the body's muscles, so that it can reduce muscle contractions.¹⁰

Based on the results of a preliminary study conducted on October 7, 2022, of 15 female students at MAN 13 South Jakarta class can still be endured so that it does not interfere with daily activities without taking medication, 2 female students experience moderate pain which is characterized by pain that is quite annoying and requires effort to endure so that when the pain appears they complain that it is difficult to carry out daily activities, and 7 female students experience severe pain which is characterized by severe pain so that you cannot do physical activity, this disrupts the learning process so that you cannot participate in the learning process because of the severe pain felt during menstruation. Most teenagers said there was no specific intervention to reduce pain.

So it is very important to study more deeply regarding interventions for treating menstrual pain. Where the researchers will provide an intervention providing a combination of music therapy and warm compress therapy, apart from that the researchers want to prove whether it is effective in reducing dysmenorrhea pain by combining two therapies. So this prompted the author to research "the effectiveness of providing a combination of music therapy and warm compresses for pain (dysmenorrhea) in adolescent girls at MAN 13 South Jakarta in 2022".

Method

The type of research used is quantitative research with a research design in the form of a pre-experimental design with a one-group pre-test and post-test design approach where this research is carried out by giving a pre-test or initial observation first before being given treatment, after which the treatment is given and then a post-test or final observation is carried out. The population in this study were all class X female students at MAN 13 Jakarta, totaling 157 respondents. This research uses a non-probability sampling technique with a quota sampling method which aims to take samples according to the quota determined by the researcher. The quota provided by the researcher is 157 samples. This sample quota is determined by researchers following Sugiyono's theory in determining samples, namely that they can take as many as 30 samples.¹¹

The instrument used in this research was to obtain data on the effectiveness of providing a combination of music therapy and warm compress therapy to reduce menstrual pain, and dysmenorrhea in young women at MAN 13 South Jakarta in 2022. The research used NRS (Numeric Rating Scale) and SOP (Standard Operating Procedure) survey observations. The data collection technique carried out by researchers used observation sheets and then given to research samples in the MAN 13 Jakarta environment. In this study, bivariate analysis was used to determine the difference between the dependent variable before and after receiving treatment using the paired t-test if the data is normally distributed. The data is said to be normally distributed if the Signed Rank normality test has a P value of > 0.05 . If the data is not normally

distributed, use the Wilcoxon test.

Results

Table 1. Distribution of levels of menstrual pain (dysmenorrhea) pre-test and post-test (n = 30)

Pre-test	Frequency	Percent (%)
No pain	-	-
Mild pain	1	3,3 %
Moderate pain	9	30,0 %
Severe pain	20	66,7%
Post-test		
No pain	-	-
Mild pain	30	100 %
Moderate pain	-	-
Severe pain	-	-

Based on table 1, shows that the most respondents on the menstrual pain scale were the severe pain scale (7 – 10) with 20 respondents (66.7%), the moderate pain scale (4 – 6) with 9 respondents (30%), and the pain scale with the mild pain category. (1 – 3) as many as 1 respondents (3.3%). Most respondents on the menstrual pain scale post-test results were in the mild pain category (1–3) with 30 respondents (100%).

Table 2. Data Normality Test

Pain Scale	Shapiro-Wilk			
	Statistic	df	Sig	Information
Pre Test	0,905	30	0,011	Abnormal
Post Test	0.806	30	0,000	Abnormal

In table 2 above, it is known that the pre-test and post-test data are not normally distributed because the significant value of the pre-test is 0.011, so > 0.05 and the significant value of the post-test data is 0.000 (< 0.05).

Table 3. Wilcoxon test

		N	Mean rank	Sum of Ranks
Post-test – pre-test	Negative Ranks	30 ^a	15,50	456
	Positive Ranks	0 ^b	0,00	0,00
	Ties	0 ^c		
	Total	30		
a. Post-Test < Pre-Test				
b. Post-Test > Pre-Test				
c. Post-Test = Pre-Test				
			Post-Test and Pre-Test	
Z			-4.816 ^b	
Asymp. Sig. (2-tailed)			0,000	

Wilcoxon Signed Ranks Test

Based on the table above, the Wilcoxon Test shows that the mean rank is 15.50. Wilcoxon test results Z value -4.816 with a p-value of 0.000 $<$ p-value 0.05, H_a is accepted, namely that there is effectiveness of the combination of music therapy and warm compresses in reducing menstrual pain (dysmenorrhea) in young women at MAN 13 South Jakarta in 2022.

Discussion

Level of Menstrual Pain (Dysmenorrhea) Pre-Test

Distribution of levels of menstrual pain (dysmenorrhea) pre-test respondents with the most severe pain scale (7 - 10) as many as 20 respondents (66.7%), moderate pain scale (4 - 6) as many as 9 respondents (30%), and pain scale with mild pain category (1 - 3) was 1 respondent (3.3%).

This research is in line with that by Mela Karmelia, Hidayat Wijayanegara, Yeni Mahwati, Herri S Sastramihardja, Roni Rowawi, Adjat Sedjati Rasyad (2021) Dharma Husada College of Health Sciences. There is effectiveness of music therapy on the level of menstrual pain (dysmenorrhea). This research is in line with that by Maidartati, Sri Hayati, and Afifah Permata Hasanah BSI University (2018). The results of this study show P-value = 0.000 where P-value < 0.05, so H₀ is rejected, meaning that there is effectiveness of giving warm compresses to reduce menstrual pain (dysmenorrhea).¹²

Music treatment is a method of healing with rhythm through the energy produced by the music itself. Listening to music with good harmony will stimulate the brain to analyze the song and influence the hormonal system in the body. Music treatment can also help growth both mentally and physically and help social skills. Treatment with musical methods can reduce pain. This is different from the research conducted by Maidartati (2018) where the procedural technique was the same as the researcher but used a different length of intervention time.¹³ Researchers carried out a warm compress intervention for only 20 minutes. This shows that with different research the results are the same, namely there is effectiveness, the research carried out by researchers is more effective because this research uses a combination of therapies is easy to carry out and does not require too much time, only 15 minutes and uses simple research instruments.

Level of Menstrual Pain (Dysmenorrhea) Post-Test

At MAN 13 South Jakarta in 2022. The results of the research showed that after a combination of music therapy and warm compresses, the menstrual pain scale showed that the highest number of respondents was in the mild pain category (1-3) with 30 respondents (100%).

This research is in line with Alhamida Salnaf Ituga (2020) Indonesian Muslim University. The data analysis used is univariate and bivariate, where bivariate uses Wilcoxon test analysis. The instrument used is the Numeric Rating Scale (NRS). The Wilcoxon test results show a value of $p = 0.000$, which means that there is an influence of Classical Music Therapy on reducing the dysmenorrhea pain scale.¹⁴ According to the theory put forward by Nurbaiti, this distraction technique is one way to reduce pain by diverting attention to something else so that the client's awareness of the pain is reduced. Music therapy has been proven to relieve pain. The music chosen is generally soft and regular music, such as instrumental music or Mozart's classical music. Listening to music can produce endorphins (morphine-like substances supplied by the body which can reduce pain) which can inhibit the transmission of pain impulses in the central nervous system so that the sensation of menstrual pain can be reduced. Music also works on the limbic system which will be transmitted to the nervous system. which regulates the contraction of the body's muscles, thereby reducing muscle contractions.¹⁵

To get the best results, warm compress therapy is carried out for 20 minutes with 1 application and measurement of pain intensity is carried out from minute to minute during the procedure. Warm therapy functions to dilate blood vessels, stimulate blood circulation, and

reduce stiffness. Apart from that, warm therapy also functions to eliminate the sensation of pain. Heat therapy can be done with hot water. This can be done with a warm towel or hot bag placed on the inflamed joint or you can also take a shower or soak in hot water.

Effectiveness of Providing a Combination of Music Therapy and Warm Compresses in Reducing Menstrual Pain (Dysmenorrhea) in Adolescent Girls at MAN 13 South Jakarta in 2022

Based on the results of the Wilcoxon test, it can be seen that the mean rank is 15.50. The Wilcoxon test results with a Z value of -4.816 with a p-value of $0.000 < p\text{-value } 0.05$. H_0 were accepted, namely that there was the effectiveness of the combination of music therapy and warm compresses in reducing menstrual pain (dysmenorrhea) in young women at MAN 13 South Jakarta in 2022. Researchers assume that female students who experience dysmenorrhea experience moderate to severe levels of pain, showing that on the menstrual pain scale, the highest number of respondents was on the severe pain scale (7 - 10) with 20 respondents (66.7%), with 9 respondents on the moderate pain scale (4 - 6). (30%), and the pain scale with mild pain category (1 - 3) was 1 respondent (3.3%). The results of the research showed that after a combination of music therapy and warm compresses, the menstrual pain scale showed that the highest number of respondents were in the mild pain category (1-3) with 30 respondents (100%).

Dysmenorrhea pain is often felt by young women (students), the pain is felt like an outbreak, usually limited to the lower abdomen, but can spread to the waist and thighs. Along with the pain, nausea, vomiting, headaches, and diarrhea can be found, and so on. But they find it difficult to find healthy and best ways to handle it, such as listening to classical music. Apart from the age of menarche, a Body Mass Index or BMI less than normal weight can be a constitutional factor that can cause a lack of body resistance to pain so that dysmenorrhea can occur. And several other factors can influence dysmenorrhea, including a family history of dysmenorrhea complaints, the habit of eating fast food, the duration of bleeding during menstruation, and alexithymia or the inability to recognize and convey emotions.

Conclusion

Based on the results of research on the effectiveness of providing a combination of music therapy and warm compresses to reduce menstrual pain (dysmenorrhea) in young women at MAN 13 South Jakarta in 2022, several conclusions can be formulated, namely: The majority of respondents' menstrual pain scale before the intervention was moderate pain scale. The majority of the posttest menstrual pain scale was mild pain. It can be seen that before and after being given a combination of music therapy and warm compresses, there is a reduction in menstrual pain (dysmenorrhea) in young women in 13 South Jakarta.

Conflict of Interest

The researcher declares that this research is independent of individual and organizational conflicts of interest.

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